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SERIAL NUMBER	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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08/301,774 09/07/94 KONUMA

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EXAMINER  
MILLER, H

ESM1/0226

SIXBEY FRIEDMAN LEEDOM AND FERGUSON  
2010 CORPORATE RIDGE  
SUITE 600  
MCLEAN VA 22102

ART UNIT	PAPER NUMBER
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2515

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DATE MAILED: 02/26/96

This is a communication from the examiner in charge of your application.  
COMMISSIONER OF PATENTS AND TRADEMARKS

☐ This application has been examined. ☒ Responsive to communication filed on 12/8/95 ☒ This action is made final.  
A shortened statutory period for response to this action is set to expire THREE (3) month(s), 0 days from the date of this letter.  
Failure to respond within the period for response will cause the application to become abandoned. 35 U.S.C. 133

Part I THE FOLLOWING ATTACHMENT(S) ARE PART OF THIS ACTION:

- |   |  |
|---|--|
| 1. <input type="checkbox"/> Notice of References Cited by Examiner, PTO-892.        | 2. <input type="checkbox"/> Notice re Patent Drawing, PTO-948.                   |
| 3. <input type="checkbox"/> Notice of Art Cited by Applicant, PTO-1449.             | 4. <input type="checkbox"/> Notice of informal Patent Application, Form PTO-152. |
| 5. <input type="checkbox"/> Information on How to Effect Drawing Changes, PTO-1474. | 6. <input type="checkbox"/>  |

Part II SUMMARY OF ACTION

1. ☒ Claim(s) 1-24 are pending in the application.  
Of the above, claim(s) are withdrawn from consideration.
2. ☐ Claim(s) have been canceled.
3. ☐ Claim(s) are allowed.
4. ☒ Claim(s) 1,3-6,8-11,13-16 and 18-24 are rejected.
5. ☒ Claim(s) 2,7,12 and 17 are objected to.
6. ☐ Claim(s) are subject to restriction or election requirement.
7. ☐ This application has been filed with informal drawing(s) under 37 C.F.R. 1.85 which are acceptable for examination purposes.
8. ☐ Formal drawing(s) are required in response to this Office action.
9. ☐ The corrected or substitute drawings have been received on . Under 37 C.F.R. 1.84 these drawings are ☐ acceptable. ☐ not acceptable (see explanation or Notice re Patent Drawing, PTO-948).
10. ☐ The proposed additional or substitute sheet(s) of drawings, filed on has (have) been ☐ approved by the examiner. ☐ disapproved by the examiner (see explanation).
11. ☐ The proposed drawing correction(s), filed on , has been ☐ approved. ☐ disapproved (see explanation).
12. ☐ Acknowledgment is made of the claim for priority under 35 USC 119. The certified copy has ☐ been received ☐ not been received  
☐ been filed in parent application, serial no. ; filed on .
13. ☐ Since this application appears to be in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under Ex parte Quayle, 1935 C.D. 11; 453 O.G. 213.
14. ☐ Other

EXAMINER'S ACTION

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Claims 5 and 10 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In claims 5 and 10, "a simple matrix electrodes" should be changed to --a matrix of electrodes--.

Claims 1 and 5 are rejected under 35 U.S.C. § 102(b) as being anticipated by Spruijt et al. (U.S. patent 4,394,067).

Spruijt et al. illustrate a liquid crystal display device in figure 1 which includes:

1. A first substrate 1 having thereon a display region and a drive circuit region comprising a drive circuit 9;
2. A second substrate 2 opposed to the first substrate and extended to oppose both of said regions on the first substrate;
3. A sealing agent 13 partitioning said regions; and
4. Liquid crystal material 15 incorporated between the substrates.

In column 2, lines 65-68, Spruijt et al. teach using a simple matrix configuration. Figure 1 clearly shows a distance between the substrates is larger than the thickness of the drive circuit.

Claims 1,3-6,8-11,13-16,18-24 are rejected under 35 U.S.C. § 103 as being unpatentable over the applicant's admission of prior art in view of Spruijt et al.

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The applicant illustrates a conventional display in figure 1 and describes it on pages 1 and 2 of the specification. The conventional display differs from the claimed invention in that the second substrate 2 does not extend to oppose the display region and the drive circuit region and the display does not include a sealing agent surrounding the drive circuit.

Spruijt et al. have been described above. Furthermore, in column 1, lines 48-54, they teach that sealing the IC between sealing material and glass plates provides a good mechanical and impervious protection for the IC. Therefore, it would have been obvious to extend the second substrate 2, in the conventional display describe by the applicant, to oppose the drive circuit region and to include a sealing agent surrounding the drive circuit to provide good mechanical and impervious protection of the drive circuit. It further would have been obvious to include an inlet in the sealing agent surrounding the drive circuit to allow for the injection of resin 7.

On page 1, paragraph 2, the applicant indicates that conventional displays comprise active elements such as TFT's. MIM diodes are also conventional active elements used in liquid crystal displays and would have been obvious to use in a conventional display as modified by the teachings of Spruijt et al. Furthermore, it would have been obvious to use a simple matrix configuration to reduce cost.

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On page 2, the applicant admits that a resin material is conventionally formed over the drive circuit. It at least would have been obvious to use an epoxy resin in a conventional display as modified by the teachings of Spruijt et al. due to the strong adhesion characteristic of epoxy resin.

Regarding claims 21,22 and 24, it was notoriously well known to place spacers in liquid crystal seals to control the distance between substrates. Therefore, it would have been obvious to include spacers in the seal of a conventional display as modified by the teachings of Spruijt et al.

Claims 2,7,12 and 17 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

#### **REMARKS**

Applicant's arguments filed 12/8/95 have been fully considered but they are not deemed to be persuasive.

The applicant argues that the prior art does not show that the distance between the substrates is larger than the thickness of the drive circuit region. However, the claims only include the limitation that a distance between the substrates is larger than the thickness of the drive circuit region. This is clearly satisfied if the drive circuit is between the substrates.

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**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 C.F.R. § 1.136(a).

A SHORTENED STATUTORY PERIOD FOR RESPONSE TO THIS FINAL ACTION IS SET TO EXPIRE THREE MONTHS FROM THE DATE OF THIS ACTION. IN THE EVENT A FIRST RESPONSE IS FILED WITHIN TWO MONTHS OF THE MAILING DATE OF THIS FINAL ACTION AND THE ADVISORY ACTION IS NOT MAILED UNTIL AFTER THE END OF THE THREE-MONTH SHORTENED STATUTORY PERIOD, THEN THE SHORTENED STATUTORY PERIOD WILL EXPIRE ON THE DATE THE ADVISORY ACTION IS MAILED, AND ANY EXTENSION FEE PURSUANT TO 37 C.F.R. § 1.136(a) WILL BE CALCULATED FROM THE MAILING DATE OF THE ADVISORY ACTION. IN NO EVENT WILL THE STATUTORY PERIOD FOR RESPONSE EXPIRE LATER THAN SIX MONTHS FROM THE DATE OF THIS FINAL ACTION.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Charles Miller whose telephone number is (703) 305-6202.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 308-0956.

*C.M.*

Charles Miller  
February 21, 1996

*William L. Sikes*

**WILLIAM L. SIKES  
SUPERVISORY PATENT EXAMINER  
GROUP 2500**